

that hardness alone can be sufficient protection to the mimicked species, such as the Bornean *Diurus fureillatus*, and we are led to suspect the existence of unpalatability. In the cabinet the specimens seem to be markedly cryptic, but Mr. Shelford assures me that they are very commonly found on flowers, where their dull dark colours would be most conspicuous. Above all things experiments with insect-eating animals are greatly needed to throw light on this most puzzling and exceptional occurrence, viz. the existence of large numbers of models for mimicry among Rhynchophora with an apparent, and certainly in many cases an actual cryptic appearance.

32. COMMON WARNING COLOURS IN SOUTH AFRICAN HYMENOPTERA AND THE MIMICRY OF THEM BY INSECTS OF OTHER ORDERS. (G. A. K. M.)

A. Group with Black Bodies and Dark Blue Wings, chiefly Fossores.

HYMENOPTERA	<i>Apidae</i> (Pl. XXI)	{	Xylocopa hottentota (fig. 18); X. carinata (fig. 19).
			<i>Eumenidae</i> (Pl. XXI)
	<i>Sphelgidae</i> (Pl. XXI)	{	
			S. pelopeiformis (figs. 4, 5); S. xanthocerus (fig. 6).
			S. umbrosus (fig. 7); Sceliphron chalybeum (fig. 8).
			Tachytes natalensis (figs. 9, 10); Ammophila ludovicus (figs. 11, 12).
	<i>Pompilidae</i> (Pl. XX)	{	A. beniniensis (fig. 13).
			Salius atropos (fig. 14); S. vindex (fig. 15).
			S. dedjax (fig. 16); S. regina (fig. 17); S. obscurus (fig. 18).
	<i>Scoliidae</i> (Pl. XX)	{	Pompilus sepulchralis (fig. 19); P. frustratus (fig. 20).
Elis lachesis (fig. 3); E. fasciatipennis (figs. 4, 5).			
<i>Tiphidae</i>	{	Scolia alaris (figs. 6, 7, 8); S. fraterna (figs. 9, 10).	
		S. cyanea (figs. 11, 12); S. affinis (fig. 13).	
<i>Mutillidae</i>	{	Tiphia rugosa (Pl. XX, fig. 2).	
		Mutilla atropos (Pl. XX, fig. 1).	

COLEOPTERA (Pl. XXI)	$\left\{ \begin{array}{l} \textit{Cetoniidæ} \\ \textit{Cantharidæ} \end{array} \right.$	$\left\{ \begin{array}{l} \textit{Trymodera aterrima}$ (fig. 22). $\textit{Epicauta pectoralis}$ (fig. 23); $\textit{E. sub-$ $\textit{coriacea}$ (fig. 24). $\textit{E. celestina}$ (fig. 25); $\textit{Lytta moesta}$ (fig. 27).
DIPTERA		$\left\{ \begin{array}{l} \textit{Asilidæ} \\ \textit{Bombylidæ} \\ \textit{Tabanidæ} \\ \textit{Tachinidæ} \end{array} \right.$
HEMIPTERA (Pl. XX)	$\left\{ \begin{array}{l} \textit{Reduviidæ} \end{array} \right.$	$\left\{ \begin{array}{l} \textit{Reduvius sp.}$ (fig. 26); $\textit{Harpactor tristis}$ (fig. 27).
LEPIDOPTERA	$\left\{ \begin{array}{l} \textit{Zyganidæ} \end{array} \right.$	$\left\{ \begin{array}{l} \textit{Tascia homochroa}$ (Pl. XX, fig. 25).

Among the Mashonaland Hymenoptera the most dominant and conspicuous group is certainly that which comprises the species having a generally black coloration with more or less metallic purple wings; for not only is the number of component species a large one, but the individuals are likewise very numerous, since the group contains many of our commonest large Aculeates, such as *Eumenes tinctor*, *Salix vindex*, *Scolia cyanea*, etc. All of the species of this large group, which are figured in Plates XX and XXI, commonly visit flowers, and owing to the numbers in which they often occur, and their close inter-resemblance, it is very difficult for one who is not an expert to distinguish the species without examining them in the net. The *Scolias* are the heaviest and slowest flying species of the group, though the largest Pompilids run them close in this respect, being very conspicuous both on the wing and when settled, and it seems probable that these two types constitute the nucleus of the mimetic group towards which the other genera have converged. Moreover, several of the large species of *Salix (Mygminia)* advertise their offensive qualities by their loud, rattling flight, which can be heard at a considerable distance. This is specially noticeable in *S. vindex*, which sounds as though it were going by clockwork, the noise often attracting one's attention when the insect is flying high above the trees. Among the other species the *Eumenes* also fly somewhat leisurely, and are not readily disturbed when feeding. But the species of *Sphex* and *Tachytes* are very active, restless insects with a swift, dodging flight. Of the Coleoptera coming into this group, *Trymodera aterrima* is the only flower-feeding species, occurring chiefly on *Protea*, the flowers of which are much frequented by Hymenoptera.

Lytta moesta and all the species of *Epicauta* are purely terrestrial in their habits, all being very common insects and evidently protected by their vesicating properties. The blue-winged Pompilids when running on the ground bear a distinct general resemblance to these insects. Of the five species of dark-winged flies, *Exoprosopa umbrosa* is the only one which visits flowers, and this has a rapid flight. The two *Lapari* and *Orectocera* (*Paraphania*) *diabolus* are to be found settling conspicuously on low plants, and have a comparatively slow flight. *Tabanus biguttatus* is a rapid flier, with the usual habits of the genus. The Zygænid moth, *Tascia homochroa*, is a very common species; it is occasionally seen on flowers, but is more frequently observed settling in a conspicuous manner on shrubs and plants. It is very sluggish in habits and emits a strong-smelling liquid when crushed.

B. *Mimicry of Diploptera by Fossores and Insects of other Orders.* (E. B. P.)

The dominant members of the group described above are evidently the Fossores, the Diploptera and Anthophila being represented by only two species each.

It is therefore somewhat surprising to note that in one of the Scolias (Figs. 6, 7, 8, Plate XX), evident mimicry of Diploptera has been brought about in a very interesting way. The outer parts of both wings, except the costal area of the fore-wing, have become extremely transparent and invisible, possessing a peculiarly illusive quality probably due to approximation of the refractive index to that of air. The effect is that both in flight (Figs. 6, 8) and at rest (Fig. 7) the resemblance to the much narrower wings of Diploptera is most striking. The resting resemblance is peculiarly interesting, for the dark areas of the wings exactly resemble the narrow longitudinally-folded organs of the Diploptera, as may be seen by comparing Fig. 7 on Plate XX with 17 on Plate XXI, or 11 and 13 on Plate XXII, while the transparent portions of the Scolia, although in two layers (compare Figs. 1, 4, 10, etc., on Plate XX), are not seen. The transparency is well shown in Fig. 8, Plate XX, where the dark apex of the wing of *Scolia fraterna* was made to underlie the transparent part of that of *Scolia alaris*, when the photograph was taken for the preparation of the plate. The underlying wing loses

neither its sharpness of outline nor, in a print prepared from the negative, any of the detail of the surface. A tendency in the same direction is manifest in *Elis fasci-atipennis* (Fig. 5), but it is hardly noticeable in the representation of the resting position in Fig. 4. Mr. Marshall informs me that the Diplopterous appearance of *Scolia alaris* is very marked during life, both at rest and in flight.

It is interesting to inquire for the possible reason of this mimicry. Fabre ("Insect Life," translation, London, 1901, pp. 99, 100) states that the Fossores, using their sting for hunting and providing food for the larvæ, are much less prone to employ it in defence than the Diploptera, in which it has this latter meaning alone, and not only so, but when used it is far less painful in the former than the latter. The *Pompilidæ*, he considers, produce the most painful effect, but far less than those which follow from the sting of a bee. On the other hand, my assistant, Mr. A. H. Hamm, who has had great experience of our British Aculeates, and always takes them out of the net with his fingers, thus gaining very exceptional knowledge of their relative powers in this respect, does not altogether share Fabre's opinion. He states that while the common wasp, and of course the hornet, for his experience includes even this insect, produce more pain than any other British Aculeate (I leave the hive-bee out of account), many of the Fossores produce more pain and use their sting more readily than other Aculeates. At the same time Mr. Hamm's treatment is one that the mildest Aculeate may be expected to resent if its sting can pierce the skin of the fingers, and the question is rather whether the Diploptera are not recognized as more formidable than the Fossores by the natural enemies of insects. It is very probable that this is the case, the combined attack made upon enemies incautiously disturbing a society being one element in producing an increased respect for single individuals of the same kind or with the same general appearance.

When an illustration of *Scolia alaris* was shown to the Entomological Society on March 5, 1902, and this interpretation suggested, Colonel Yerbury and Mr. Verrall pointed out, at the close of the meeting, that similar opacity of the costal area of the wing and transparency in other parts was characteristic of many Diptera mimetic of Hymenoptera,

and might have a similar meaning. Mr. A. J. Chitty also suggested that the same interpretation applies to the Sesiid moth shown on Plate XXII, figs. 15, 16. In this latter case the shape of the opaque area would present during flight a very close approximation to the outline of the narrow fore-wing and small hind-wing of the Diploptera, many of which are figured on the same plate as the Sesiid (compare Figs. 7, 8, 10, 12, etc., with Fig. 16).

It seems probable that the case of *Scolia alaris* will throw much light on the manner in which the mimicry of Aculeates is brought about in insects of many orders.

C. Group with Black Bodies and Yellow Tails, chiefly
Diploptera (Represented on Plate XXII).

HYMENOPTERA.

Scoliadae.

Scolia erythropyga (figs. 1, 2).

Pompilidae.

Salix tamisieri (figs. 3, 4).
„ *spectrum* (fig. 5).

Eumenidae.

Rhynehium synagroides (fig. 6).

Synagris abyssinica (fig. 7).

Synagris mirabilis (fig. 8).

Synagris emarginata (figs. 9, 13).

Synagris analis (figs. 10, 11).

Synagris xanthura (fig. 12).

Eumenes dyschera (fig. 14).

LEPIDOPTERA.

Sesiadae.

Trochilium sp. (figs. 15, 16).

DIPTERA.

Bombylius sp. nov. (fig. 17).

Silvius pertusus (fig. 18).

All the Hymenoptera in this group are common insects occurring in some numbers on suitable flowers. Their metallic blue wings and yellow tails make them very noticeable objects, and their flight is leisurely. Of the *Trochilium* only two specimens were taken—both of them on the wing, when the resemblance to a large *Synagris* was most remarkable, being much heightened by the transparent edging of the hind-wing, which is thus made to appear of about the same size and shape as that of the wasp. Of the two Diptera, one, the *Bombylius*, is very common, especially about flowers; the other, *Silvius pertusus*, is apparently scarce. There is not sufficient evidence to judge on their true relation to the group.

[The conspicuous yellow apex of the abdomen probably acts as an easily seen directive mark indicating the sting. Compare pages 510 to 512.—E. B. P.]

D. *Group with Dark Bodies, Central White Patch and Red-Brown Tails: Megachile the Models* (Represented on Plate XXI).

HYMENOPTERA.		DIPTERA.	
Megachile	chrysoorrhœa (fig. 29).	Laphria	nr. flavipes (fig. 31).
„	nasalis (fig. 28).		
Cœlioxys	pusilla (fig. 30).		

The *Megachile* bees mentioned above are both common, not only visiting flowers, but also, during the drier months, occurring in some numbers on damp sand or mud near water. The parasitic *Cœlioxys* may be seen with them in both stations, but is a much scarcer insect. The Asilid is also an uncommon species, having the usual habits of its congeners and settling about on low plants.

E. *Group with Black Thorax and Yellow Abdomen: all Hymenoptera* (Represented on Plate XXIII).

<i>Tenthredinidæ</i>	<i>Athalia bicolor</i> (fig. 11).
<i>Chalcididæ</i>	<i>Chalcis bicolor</i> (fig. 10).
<i>Scoliidæ</i>	<i>Elis aureola</i> (fig. 1).
<i>Crabronidæ</i>	{ <i>Philanthus fuscipennis</i> (fig. 2); <i>P. diadema</i> (figs. 3, 4); <i>P. bucephalus</i> (fig. 5).
<i>Eumenidæ</i>	<i>Rhynchium radiale</i> (fig. 6); <i>R. rubens</i> (figs. 7, 8).
<i>Andrenidæ</i>	<i>Splicodes rufiventris</i> (fig. 9).

This is a beautifully compact and uniform little group, and is specially interesting owing to its comprising species of no less than six families of Hymenoptera, which exhibit great differences in their food and general habits—especially in their earlier stages. Yet the imagines may be frequently observed all flying together about the same patch of flowers, and the uniformity of their coloration is then very striking. All the species are common and efficiently protected, so that the association is probably Müllerian.

F. *Group with Black Bodies, Blue Wings, and Yellow or Red Thorax* (Represented on Plate XXIII).

HYMENOPTERA	{	<i>Apidæ</i>	{	<i>Xylocopa lateritia</i> (fig. 12); <i>X. flavo-</i> <i>rufa</i> (fig. 13).
		<i>Scoliidæ</i>		<i>Xylocopa olivacea</i> (fig. 16); <i>X. modesta</i> (fig. 17).
LEPIDOPTERA	{	<i>Sesiidæ</i>	{	<i>Podalirius acraënsis</i> (fig. 14); <i>Antho-</i> <i>phora ? basalis</i> (fig. 15).
				<i>Elis cælebs</i> (fig. 18). <i>Melittia</i> sp. (fig. 19).

This group forms another interesting illustration of the way in which the larger mimetic groups tend to merge one into the other. Such species as the *Podalirius* and *X. olivacea* in which the anterior yellow is largely developed clearly belong to the outlying portions of the Lycoid group (Plate XVIII), whereas *Elis cælebs* has more affinity with the succeeding group; and this latter again merges away into the great black group with blue wings (Plates XX and XXI). The two largest *Xylocopas* (*X. lateritia* and *X. flavorufa*) only belong to the outskirts of the association, as the red of the thorax is in them of a much darker tint and does not show up well in the Plate. All the Hymenoptera of the group are found plentifully on flowers; but as regards the *Melittia*, the specimen figured is, I believe, the only one known.

G. Group with Black Bodies, Blue Wings, and Red or Yellow Heuls (Represented on Plate XXIII).

HYMENOPTERA	{	<i>Pompilidæ</i>	{	Pompilus marshalli (fig. 20); P. dichrous (figs. 21, 22); P. anticus (fig. 24). Pompilus lascivus (fig. 23); Salius tamisieri (fig. 25).
COLEOPTERA	{	<i>Sphegidæ</i>	{	Tachysphex fluctuatus (fig. 26).
DIPTERA	{	<i>Longicornia</i>	{	Jonthodes sculptilis (fig. 28). Bromophila caffra (fig. 27).

Converging towards these but with black wings instead of blue are the Braconid *Iphiaulax ruber* (Fig. 31) and the Cantharid *Eletica rufa*, var. (Fig. 29).

This is only a subdivision of the group of black-bodied and blue-winged insects. The Hymenoptera have all much the same habits as the species contained in that group, though they are mostly of much smaller size. The Longicorn *Jonthodes* bears a very good general resemblance to the blue-winged, yellow-legged *Salius dedjax*, owing to its blue elytra and yellow legs; it is not a particularly common species, being diurnal and arboreal in its habits. It possesses a strong scent-like smell, and the mimicry is probably Müllerian. The *Bromophila* fly is very plentiful; it is the most sluggish fly known to me, and settles about on trees and bushes in a very conspicuous manner. It ejects a yellow liquid from the mouth when handled, and was refused when offered to my baboons and *Cercopithecus* monkey.

H. *Group with Black and Yellow-Banded Bodies: all Hymenoptera* (Represented on Plate XXIII).

<i>Scoliadae.</i> Myzine capitata (fig. 35).	<i>Pompilidae.</i> Pompilus festinus (fig. 34).	<i>Ichneumonidae.</i> Metopius discolor (fig. 36).
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In Europe, owing to the predominance of the genus *Vespa*, black and yellow bands constitute a very dominant type of coloration among the Hymenoptera; but in Mashonaland (where *Vespa* is entirely absent) this pattern is of comparatively rare occurrence, and, except in the case of one large *Scolia* and some *Bembex*, is confined to small insects. The two Aculeates in the above group are common frequenters of flowers, and to them might have been added several small species of *Ellis*, etc.; the Ichneumon is common in woods.

I. *Group with Dark Wings and Black-and-Yellow Legs: Ichneumonid Models* (Represented on Plate XXIII).

HYMENOPTERA. <i>Ichneumonidae.</i> Osprynchotus flavipes (fig. 32).	COLEOPTERA. <i>Longicornia.</i> Litopus dispar (fig. 30).	HEMIPTERA. <i>Reduviidae.</i> Pirates aeneicollis (fig. 33).
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The *Litopus* is evidently one of the protected Cerambycids, as shown by its diurnal habits, blue elytra, brightly-banded legs, and strong smell. The *Pirates*, with its dark wings and black-and-yellow legs, shows a distinct approximation to the former insect, which is probably of a Müllerian nature, as it is capable of emitting a strong and unpleasant smell, can pierce very effectively with its strong rostrum, and has the power of stridulation. *Osprynchotus* is also a conspicuous and very common insect. In South Africa it seems to be principally parasitic upon *Pelopeus spirifer*, and it is a curious thing that although these two insects are so very different in coloration (except the hind-legs), yet there is an undoubted similarity between them when seen together on the wing.

J. *Black and Yellow-Barred Braconid Group and Mimics* (Represented on Plate XVIII).

HYMENOPTERA	{ <i>Braconidae</i>	Phanomeris dubius (fig. 59).
	{ <i>Ichneumonidae</i>	Pimpla tuberosa (figs. 60, 61).
HEMIPTERA	<i>Reduviidae</i>	Callilestes stigmatellus (fig. 62).

This is a beautiful little group, presenting very striking resemblances. The *Phanomeris* is doubtless the chief model, being a common species with a strong smell and a slow, conspicuous flight. The colouring of the *Pimpla* is probably Müllerian, while that of the Reduviid is certainly Batesian. The latter is evidently a very scarce insect, the only example which I have met with having been captured accidentally in mistake for the Braconid, to which it bears a wonderful resemblance on the wing.

K. *Black and Red Braconid Group and Mimics* (Represented on Plate XVIII).

HYMENOPTERA	<i>Braconidæ</i>	{ Bracon coccineum (figs. 53 54); Iphiaulax pictus (fig. 55); I. flagrator (fig. 56). Oberea scutellaris (fig. 57). Callilestes bicolor (fig. 58).
COLEOPTERA	<i>Longicornia</i>	
HEMIPTERA	<i>Reduviidæ</i>	

In this group the pattern is certainly set by the *Braconidæ*, which are common, conspicuous, slow-flying insects, protected by their strong smell. The Reduviid is an admirable mimic of them (Batesian, as I believe) both at rest and on the wing; it is a scarce species, and frequents the same stations as the Braconids. The Longicorn agrees also in the latter respect, but its exact relationship to the group is doubtful; normally it is not a very common species in Salisbury, but in one or two seasons it has appeared quite plentifully, settling on low plants on wooded kopjes.

L. *Diptera Mimicking Single Species of Hymenoptera rather than the General Type of a Group.*

a. *Asilid Fly Mimicking Xylocopid Bee* (Represented on Plate XXII).

HYMENOPTERA.	DIPTERA.
Xylocopa flavorufa (fig. 19).	Hyperechia marshalli (fig. 20).

[With reference to these insects Mr. Marshall wrote:]

Salisbury, Feb. 12, 1899.—I was immensely delighted on catching the large Asilid fly, and I have been delaying the

box on purpose to include the large *Xylocopa* bee which it mimics so admirably; but though usually they are common enough I have not seen a single example for the last three weeks. The fly completely deceived me when on the wing, but I happened to notice it settle on the trunk of a tree, and it struck me there was something curious about the way it alighted for a *Xylocopa*. It is the only example I have seen.

Salisbury, April, 25, 1899.—I have already got a couple of the *Xylocopas* for you, and I have seen another specimen of the *Laphria* that mimics them, but unfortunately failed to catch it.

β. *Syrphid Fly Mimicking a Wasp* (Represented on Plate XXIII).

HYMENOPTERA.
Polistes marginalis (fig. 40).

DIPTERA.
Ceria gambiana (fig. 41).

This is an excellent and typical case of Batesian mimicry. The wasp is a very common species, building a small hanging nest on bushes or grass-stems. Like most of its congeners it is a somewhat sluggish insect, and instead of flying away when approached, adopts a bold and defiant attitude, stinging sharply when disturbed. It visits flowers freely, and may there be seen in company with the *Ceria*, which resembles it so closely (especially on the wing) that I have been deceived by it over and over again.

γ. *Bee-like Group* (Represented on Plate XXIII).

HYMENOPTERA.
Apidæ.
Megachile apiformis
(fig. 37).

Syrphidæ.
Eumerus, sp. nov.?
(fig. 38).

DIPTERA.
Asilidæ.
Laxenecera mollis
(fig. 39).

The resemblance of the two flies to the *Megachile* is very marked in the field, especially in the case of the *Laxenecera*; although the plate does not do justice to the *Eumerus*. I have on several occasions seen all three species flying together in the vicinity of flowers.

M. Group of Ant-like Insects captured together (Represented $1\frac{1}{2}$ times the natural size on Plate XIX).

HYMENOPTERA	<i>Formicidæ</i>	{	Camponotus sericeus (fig. 54); C. cosmius (figs. 55, 56); C. sp. (fig. 53).
HEMIPTERA	<i>Pyrrhocoridæ</i>		Megapetus atratus (figs. 57, 58).
ORTHOPTERA	<i>Locustidæ</i>		Myrmecophana ? fallax (fig. 59).

The above insects were all caught on the same day (Feb. 17, 1901) on a single plant—a small bushy vetch. The Pyrrhocorid habitually frequents this plant, being fond of sucking the young pods; the ants are more or less ubiquitous, but are principally attracted to this vetch by the juice which exudes from the injuries made by the bug; the *Myrmecophana*, which is apparently a very rare insect, was probably only a chance visitor. The latter, in spite of its long antennæ, bears a very strong resemblance to an ant, and might very readily be passed over for one of these insects; it is probably a Batesian mimic. The bug is not nearly so ant-like in its mature form (which is shown in Plate XIX) as in its earlier stages, at which period the similarity is most striking both in shape and movements. The insect is a comparatively common one, and the mimicry has probably a Müllerian character.

[The following extracts from letters refer to this interesting group. Mr. Malcolm Burr, to whom I have shown the Locustid, thinks that it may be the same species as *M. fallax*, inasmuch as the habits of the latter are not certainly known, and the green marking which obliterates the unant-like parts of the body-form had faded to a pale yellowish tint much like that of the corresponding parts of the specimen described by Brunner von Wattenwyl (verhandl. d. K. K. Zool.-botan. Ges. in Wien, Bd. xxxiii, 1883, Pl. XV, figs. 1a and 1b).—E. B. P.]

Salisbury, April 25, 1899.—The Locustid ant-mimicker *Myrmecophana* occurs both here (Mashonaland) and in Natal, though very rarely, but it is perhaps a different species from *M. fallax*. It does not live on the ground but on low plants, which are also frequented by the ant it mimics, and the light parts are pale green; we have also a bug which mimics the same ant.

Salisbury, April 19, 1901.—I expect you will be glad to have an example of *Myrmecophana*, it makes a grand series with the ants and bugs; the two latter can often be

found together on a certain vetch, but it was a bit of luck getting the Locustid there too.

33. MIMETIC RESEMBLANCE OF MANTISPIDÆ TO HYMENOPTERA. (E. B. P.)

Prof. W. M. Wheeler, of the University of Texas, was, so far as I am aware, the first to observe the mimicry of Hymenoptera by *Mantispidæ*. "While studying the prairie insect fauna of south-eastern Nebraska early in the summer of 1888," he observed that *Mantispa brunnea* (Say.) closely resembled *Polistes variatus* (Cress), resting half-concealed like the wasp "on the petioles in the terminal leaf-clusters of the golden rods." He was at first quite deceived, and took care to avoid being stung. "The colouring of the *Polistes* is carefully copied; the body is banded with yellow, brown, and black, the wings are smoky brown, and the legs yellow. While lying in wait the *Mantispa* closely appose their large raptorial fore-legs to the lateral faces of the prothorax, which, when these appendages are extended, is so narrow as to resemble but slightly the wasp's thorax. The wings are carried in the same manner by both insects. Several times during the course of a week I found these two insects . . . resting in the same position, both intent upon the slaughter of the many insects . . . which swarmed about the rank vegetation" (Proc. Nat. Hist. Soc. Wisconsin, U.S.A., April 1889, p. 217). Professor Wheeler considers it to be an example of protective mimicry.

Mr. R. Shelford has recently observed that at least four species of *Mantispa* from Borneo and Singapore are beautifully mimetic of Ichneumonids, Bracons, or Aculeates. His observations are now being published by the Zoological Society. I sent a photograph of some of his examples to Mr. Marshall, who replied with the observation printed below. These interesting records constitute, so far as I am aware, a distinct addition to the list of insect mimics of the Hymenoptera. Mr. McLachlan, whom I have consulted, writes that he cannot find anything further recorded about such resemblance on the part of *Mantispidæ*. There can be little doubt, after these observations from three such widely-different regions, that mimicry of the Hymenoptera will prove to be prevalent in the group. Mr. Shelford and